

Description of a Rare Lophotid Fish from Cape Runaway, New Zealand.

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Having recently received a perfect specimen of the rare Crested Band Fish, or, as it is sometimes called, Unicorn Fish, I am now able to re-figure and re-describe this interesting species.

The synonymy of the species, both generic and specific, is involved and uncertain, and I have therefore followed the recommendation of Mr. Gilbert Whitley, of the Australian Museum, to present it in full in this paper. I desire also to thank Mr. Whitley for his valuable help in working out the details of the synonymy which is given below.

Family LOPHOTIDAE.

Genus LOPHOTUS Giorna 1809.

- 1809—*Lophotus* Giorna, Mem. Acad. Sci. Turin, 1805–8 (publ. 1809), p. 179. Not *Lophotes* and date not 1803, as Agassiz quotes—*fide* Sherborn, Index Animalium. Genotype, *L. cepedianus* of Authors.
- 1814—*Leptopus* Rafinesque, Specchio delle Scienze i., Palermo, Jan., 1814, p. 16. Genotype, *L. peregrinus* Rafinesque—*fide* Jordan, Gen. Fish, 1917, p. 86. Preoccupied by *Leptopus* Latreille, 1809, Hemiptera.
- 1815—*Podoleptus* Rafinesque, Anal. Nat. 1815, p. 93, according to Jordan, but Sherborn was unable to find the name in this book. Said to be a substitute for *Leptopus* Raf. 1814.
- 1817—*Lophotes* Bosc, Nouv. Dict. Hist. Nat. XVIII., 1817, p. 185. Based on Cuvier, Ann. Mus. XX., 1813, fig. 17; no specific name.
- 1817—*Lophotus* Oken, Isis, 1817, p. 1182. Logotype *Lophotes cepedianus*—*fide* Jordan, Gen. Fish. 1917, p. 101. But Oken's names are *nomina nuda* and have no standing.
- 1820—*Lophotes* Goldfuss, Man. Zool. ii., 1820 Taeniosom.—*fide* Cuvier and Valenciennes, Hist. Nat. Poiss. i., 1828, p. 225.
- 1822—*Lophotes* Schinz, Das Theirreich (Cuvier) ii., April, 1822, p. 400. Haplotype "*Lophod. Cepedii*" Schinz, the first latinization of the vernacular specific names of Giorna, Cuvier, etc.
- 1823—*Lophotus* Cloquet, Dict. Sci. Nat. (ed. Levrault) XXVII., 1823, p. 194. Species called *Lophotus cepedianus*.

- 1826—*Lophotes* Bory de Saint-Vincent, Dict. Class. Hist. Nat. IX., Feb., 1826, p. 498. Species called *Lophotus Lacepedianus*, based on Giorna and on Cuvier.
- 1826—*Lophotus* Risso, Hist. Nat. Europe Merid. iii., 1826, p. 292. Species here called *L. lacepede*.
- 1827—*Lophotes* Berthold, Nat. Fam. Thierreich (Latreille), 1827, p. 138.
- 1832—*Lophotus* Voigt, Das Thierreich (Cuvier) ii., 1832, p. 306.
- 1835—*Lophotes* Cuvier and Valenciennes, Hist. Nat. Poiss. X., Sept., 1835, p. 407, pl. ccci.
- 1846—"Lophotes Giorna 1803" (should be *Lophotus* Giorna, 1809) Agassiz, Nomencl. Zool. 1846, Index Universalis.
- 1861—*Lophotes* Valenciennes, Dict. Univ. Hist. Nat. vii., 1861, p. 442. Not *Lophotes* Lesson, Traite Ornith. (2), May, 1830, p. 96, a genus of birds; *Lophotus* Fischer, Zoognosia ed. 3, ii., 1813, p. 548, mammals; and *Lophotus* Schoenherr, Gen et sp. Curcul. ii., 1, 1834, p. 314, a genus of Coleoptera, the latter equals *Orodinus* Gistel (not Jordan).
- 1917—*Podoleptus* Jordan, Gen. Fish. i., 1917, p. 92. Attributed to Rafinesque, Ann. Nat. 1814, but not there according to Sherborn, Index. Anim. Substitute for *Leptopus* Rafinesque, 1814.
- 1919—*Orodinus* Jordan, Pro. Acad. Nat. Sci. Philad. LXX., 1918 (publ. April 10, 1919), p. 339. *Ex* Gistel, Nat. Thier, 1848. Reference to Gistel's work shows that *Orodinus* was proposed for a beetle, *Lophotus* Schoenherr, preocc. by Giorna's name, and not for the fish genus, as Jordan thought.
- 1933—*Regilophotes* Whitley, Rec. Austr. Mus. xix., Aug. 2, 1933, p. 72. Orthotype, *Lophotes guntheri* Johnston, 1883. New name given under the mistaken impression that the typical *Lophotus* of Giorna was perhaps a *Trachipterus*.

Whitley suggests that *Regilophotes* may stand as a subgenus for the Australian species.

From the foregoing it will be seen that this fish, which has been generically named *Lophotus* or *Lophotes*, was referred to under the vernacular names by the early French writers, and Whitley points out that the earliest spelling and date, according to Sherborn's *Index Animalium* is *Lophotus* Giorna, 1809, which apparently stands for the genus, the type of which is usually called *Lophotes cepedianus*, but this name appears to be a synonym of *L. peregrinus*.

The principal synonymy of the species of the typical Crested Band Fish of Europe, etc., is as follows:—

LOPHOTUS PEREGRINUS (RAFINESQUE).

(Vernacularly named only as a species in Giorna; Cuvier Ann. Mus. XX., 1813, pl. xvii., Bosc; Valenciennes, etc.)

- 1814—*Leptopus peregrinus* Rafinesque, Specchio delle Scienze i., Palermo, Jan., 1914, p. 16, and *Precis Somiol.* 1814, wrapper p. 4. Palermo (*vide* Sherborn).
- 1822—*Lophotes cepedianus* Schinz—p. 401. Based on Cuvier, Vernac.
- 1823—*Lophotes cepedianus* Cloquet, Voigt, etc., not *Gymnetrus cepedianus* Risso, 1810, which is a *Trachipterus*.
- 1826—*Lophotes lacepedianus* Bory de Saint-Vincent.
- 1826—*Lophotes lacepede* Risso, *Hist. Nat. Eur. Merid.* iii., 1826, p. 293. Nice district, Mediterranean.
- 1835—*Lophotes cepedianus* Cuv. & Val.
- 1839—*Lophotes siculus* Swainson, *Hist. Nat. Fish.*, etc., ii., 1839, p. 396, fig. 126. Sicily where Rafinesque had observed it.

Other nominal species of *Lophotes* appear to be as follows:—

Lophotes capelli Temminck & Schlegel, *Fauna Japon.* (Pisces 1845), p. 132, pl. lxxi., fig. 2. Seas of Japan. (Whitley suggests that the Californian Crested Bandfish may be this species.)

Lophotes machadoi Ribeico, *Bol. Mus. Nac. Rio de Janeiro* iv., 1928, p. 21, Brazil.

Lophotes cristatus Johnson, *Pro. Zool. Soc. Lond.* April 29, 1863, p. 38, Madeira.

The synonymy for the New Zealand and Australian species of Crested Band Fish is as follows:—

LOPHOTUS GUNTHERI Johnston.

Crested Band Fish (Plate 53).

- 1883—*Lophotes guntheri* Johnston, *Rept. Roy. Soc. Tasm.* 1882 (1883), p. 13; *Pap. Proc. Roy. Soc. Tasm.* 1882 (1883), pp. XLV., 142 and 177; *ibid.* 1890 (1891), p. 34. Emu Bay, N.W. Tasmania 31.10.1882.
- 1894—*Lophotes cepedianus* Parker, *Trans. N.Z. Inst.* xxvi., p. 223. St. Clair Baths, near Dunedin.
- Specimen in the Otago Museum. Not *Lophotes cepedianus* Cloquet, and authors.
- 1897—*Lophotes* sp. Clarke, *Trans. N.Z. Inst.*, xxix., June, 1897, p. 251, pl. xvi. Coast of Taranaki.
- 1904—*Lophotes fiskei* Hutton, *Index Faun. N.Z.*, p. 47. Not *Lophotes fiskii* Gunther, 1890, which belongs to the genus *Eumecichthys* Regan, *Pro. Zool. Soc. Lond.*, 1907, ii., p. 638.
- 1907—*Lophotes fiski* Waite, *Rec. Cant. Mus.* i., 1, p. 33.
- 1909—*Lophotes cristatus* Kershaw, *Vict. Nat.* xxvi., p. 78. Apollo Bay, Victoria. Not *L. cristatus* Johnson, 1863, from Madeira.
- 1914—*Lophotes cepedianus* Waite, *Trans. N.Z. Inst.* xlvi., June 15, 1914, p. 130, pl. iv., fig. 2, Wellington district.
- 1924—*Lophotes guntheri* Lord & Scott, *Vertebr. Anim. Tasm.*, p. 47.

- 1927—*Lophotes cepedianus* Phillipps, Marine Dept. Bull. N.Z. i., p. 52.
- 1929—*Lophotes cepedianus* Young, Trans. N.Z. Inst. LX., p. 145. Chatham Islands.
- 1929—*Lophotes guntheri* Whitley, Pap. Proc. Roy. Soc. Tasm. 1928 (1929), p. 50.
- 1929—*Lophotes guntheri* and *crisatus* McCulloch, Austr. Mus. Mem. V., p. 139.
- 1933—*Regilophotes guntheri* Whitley, Rec. Austr. Mus. xix., I., p. 72.

Systematic description:—

Br. 5. D. CXC.V./XX./VI./XVII./VI. A. XVII./VI.; C. VII.; P. XIV.: V.5.

Greatest depth 5.902 in the total length to base of caudal. Head 6.857 in same and 1.162 in the depth. Eye 2.625 in the head.

Body elongate, compressed, the dorsal and ventral profiles almost subequal, forming a high crest above the head, the anterior margin of which is keel-like. Above the lateral line, the body is covered with quadrangular scales of extreme thinness directed obliquely backwards; when removed distinct pits are left behind. No scales are present below the lateral line, and little or no indication of pits can be seen, but owing to the highly deciduous nature of the scales it is possible these may have all disappeared at the time of capture.

Lateral line commencing at the base of the anterior spine of the dorsal curves downward to the pectoral, and thence follows a long even curve to the caudal.

Head wholly bony, the bones of the operculum and preoperculum heavily striated. Mouth small, oblique, the maxilla reaches backward to about the first quarter of the eye.

Teeth in jaws conical and depressable, those in the upper forming an irregular band with a gap in front, while those in the lower jaw are in a single series. The vomer is toothless, but there is a pair of strongly hooked depressable teeth placed mesially on its posterior margin. A single short depressable tooth is also found on the outer side of the palatine bones, but the palate and tongue are smooth.

Eye large, circular, placed rather nearer the lower than the upper profile. Nostril minute, pore-like, placed above the mouth on the lower margin of the crest.

Gills four, a slit behind the fourth. Gill-rakers rather long and flattened. I count seven on the lower half of the anterior limb. Pseudobranchiae present.

Fins: Anterior dorsal spine exceedingly elongate and having a small leaf-like lobe at the tip; this is followed by two other spines connected by thin membrane to the anterior one. The

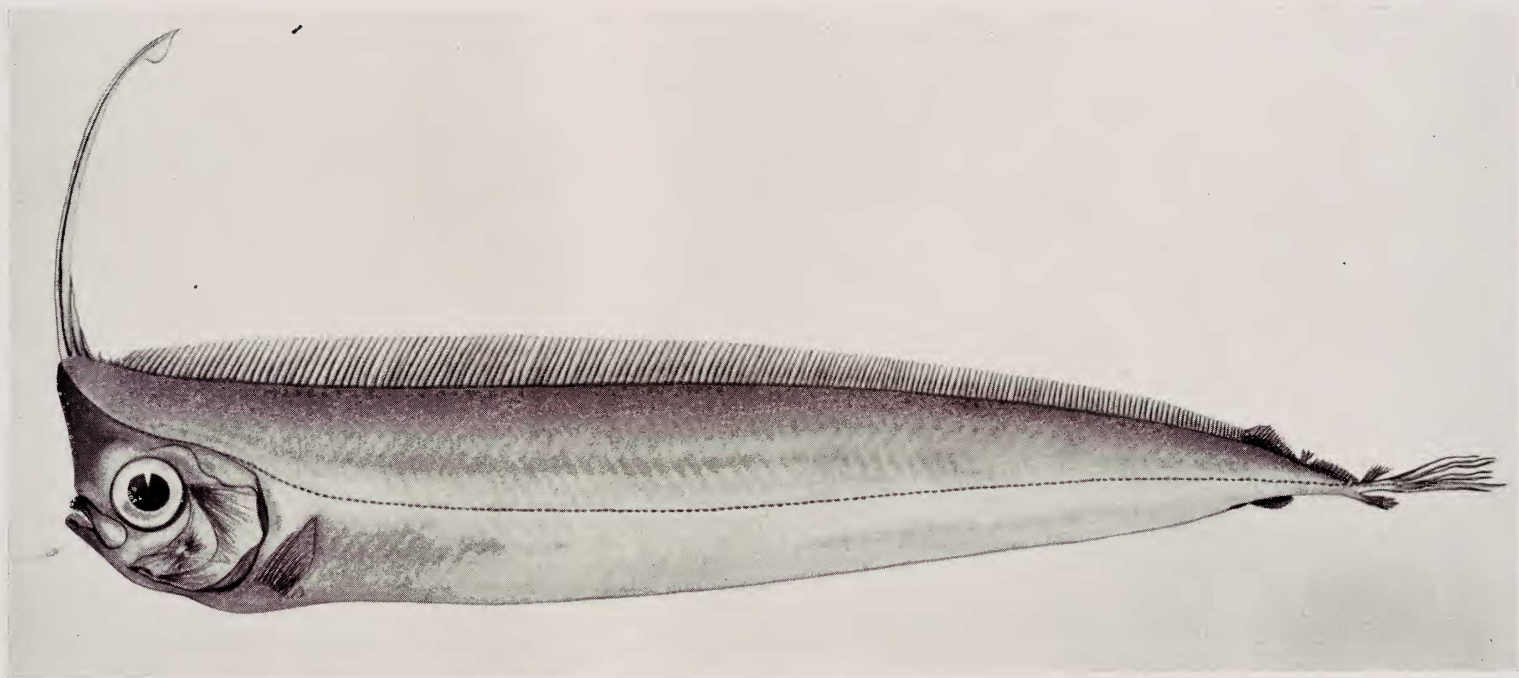
three next spines are very short and appear to form a distinct notch, but all are connected by membrane to the greater portion of the dorsal along the back. The posterior portion of the dorsal appears to be split up into four parts, and the membrane covering these fins is thicker and roughened, quite different from the clear membrane found in the middle and anterior part of the dorsal. The anal is similar to the posterior dorsal fins. The caudal was reduced to long roughened spines, flattened and bent, and no membrane was found connecting them. Pectoral has a broad base and the rays are directed vertically. Ventral minute, situated below and a little behind the base of the pectoral.

Colour: When first taken, the whole of the body was brilliant silver, with no vestige of spots or other markings. Fins, bright pink, the spines somewhat darker. Anterior dorsal spine dark brown with pale pink membrane, and the leaf-like lobe at the extremity bright red. The small detached posterior fins of the dorsal and anal, including the caudal spines, deep rose colour.

Locality: Waihau Bay, Cape Runaway, East Coast, New Zealand. Captured by Mr. H. F. Kemp on 5th October, 1933, to whom I am greatly indebted for forwarding the specimen in such perfect condition. Mr. Kemp informed me that when this fish was speared it ejected a very large quantity of sepia-like fluid from the anus.

Described and figured from a specimen which is 720 mm. long to the hypural joint. The head is 105 mm., greatest width 122 mm., eye 40 mm.

Specimen in the Auckland Museum.



L. T. Griffin del.

Lophotus guntheri (Johnston, 1883).